



# I<sup>2</sup>PCC

## Interprovincial Internationalization Project China Cleantech

A joint project of the Belgian provinces of Antwerp, Limburg,  
East Flanders and Flemish Brabant



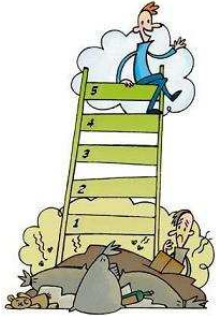
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# Flemish Cleantech at a glance

## 法兰德斯突出案例介绍

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## Outline 介绍内容

Philosophy



我们的理念

Overview technology



技术一览

Technology at a glance



技术案例



# Philosophy 我们的理念

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**PREVENTION**

- ENERGY: Efficient consumption & storage
- RESOURCES: minimal use or renewable
- MOBILITY: more sharing/autonomous
- EMISSIONS to air, water soil: prevention

**RENEWABLES/RECYCLING**

- ENERGY: Renewable production
- RESOURCES: recycling, landfill mining
- MOBILITY: with electricity or hydrogen
- EMISSIONS: recycling to new resources, bioremediation, attenuation

**REMOVAL/MINIMAL FOSSIL**

- ENERGY: minimal fossil energy
- RESOURCES: minimal use mass burning, sorting
- MOBILITY: minimal fossil energy, (bio)gas
- EMISSIONS: minimal end-of-pipe technology

Step1  
第一步

Step2  
第二步

Step3  
第三步

预防为主（从源头抓起）

- 能源：能源高效利用、电及热能储
- 资源使用：尽量不使用新的资源或使用可再生资源
- 交通：尽量减少个人用车，共享单车或公共交通/自动驾驶
- 向空气、水及土壤的排放：以预防为主

可再生/回收

- 能源：可再生能源生产
- 废物转资源：再利用、回收及填埋
- 交通：使用电力交通（可再生的）或氢气
- 向空气、水及土壤的排放：回收变成新的资源，生物修复法及衰减稀释

去除/减少石化能源

- 能源：减少石化能源
- 废物转资源及能源：尽量减少大量的垃圾焚烧及填埋
- 交通：尽量减少石化能源类交通，生物质能优先
- 向空气、水及土壤的排放：尽量减少管末处理

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# Overview technology 技术一览

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**PREVENTION**

- Energy
  - State of art electrolysis: **Hydrogenics**
- Resources
  - Ultra Clean detergents: **Ecover**
- Mobility
  - Reinventing urban mobility: **Kurt**

→ Sustainability as a merge of Energy & Resources & mobility

- City planning: **AWG architects**

Step1  
第一步

第一步：预防

- 能源
  - 一流的电解技术：**Hydrogenics**
- 资源
  - 超级清洁洗涤产品：**Ecover**
- 交通
  - 重塑城市交通模式：**Kurt**

→ 可持续发展是通过能源、资源及交通相结合而实现的：

- 城市规划：**AWG architects**

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## Step1: Technology at a glance 第一步：技术案例

I<sup>2</sup>PCC**HYDROGENICS**

Hydrogen generators &amp; Fueling stations

- + More than 60 years experience
- + Up to 780kg H<sub>2</sub>/day
- + Efficient and safe installations

[www.hydrogenics.com](http://www.hydrogenics.com)

氢能发电机及加氢站

- 超过60年的产品经验
- 产能780kg H<sub>2</sub>/日起
- 能效高及安全的设施


**HYDROGENICS**  
 SHIFT POWER | ENERGIZE YOUR WORLD


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## Step1: Technology at a glance 第一步：技术案例

I<sup>2</sup>PCC**ECOVER**

Household detergents &amp; personal care

- + Clean resources (local)
- + Clean plastics (no virgin packing)
- + Clean production (zero emission)

[www.ecover.com](http://www.ecover.com)

家庭及个人护理洗涤产品

- 使用清洁资源（就近取材）
- 使用清洁塑料（回收塑料）
- 使用清洁生产过程（零排放）


**ECOVER**  
 POWERED BY NATURE


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## Step1: Technology at a glance 第一步：技术案例

I<sup>2</sup>PCC**Kurt (powered by Altreonic)**

Unique patented modular and scalable propulsion platform

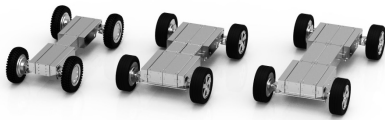
+ optimally designed for urban environments

+ No batteries, with Chinese super capacitors

[www.kurt.mobi](http://www.kurt.mobi)

独特的专利模块及可拓展平台

- 专为城市环境而设计
- 不带电池，使用中国生产的超级电容器



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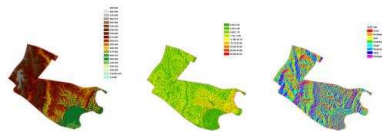
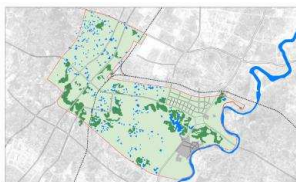
## Step1: Technology at a glance 第一步：技术案例

I<sup>2</sup>PCC**AWG Architects**

Large scale city planning for Chengdu (Biotown)

[www.awg.be](http://www.awg.be)

大规模城市规划项目 (biotown)



**awg** architecten



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## Overview technology 技术一览

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### RENEWABLES/RECYCLING

- Energy
  - Easy windenergy: **Xant**
  - Innovative waterenergy: **Turbulent**
- Resources
  - Biogas from waste: **OWS**
  - Metals recycling: **Umicore**
- Emissions
  - Phosphorus recovery from water: **Nuresys**
  - Soil remediation with plants & bacteria: **Bio2Clean**



### 可再生/回收

- 能源
  - 风能: **Xant**
  - 创新的水能发电: **Turbulent**
- 资源
  - 废物产生的生物质能: **OWS**
  - 材料回收: **Umicore**
- 减排
  - 从污水中进行磷回收: **Nuresys**
  - 利用细菌及植物对土地进行修复: **Bio2Clean**



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## Step2: Technology at a glance 第二步：技术案例

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### XANT

- 100 kW windturbine
- + Shipped in standard containers
- + Build without a crane
- + Easy maintenance
- + Off-grid ready

[xant.com/off-grid-systems/](http://xant.com/off-grid-systems/)

- 100kW 风力发电机组
- 可用标准集装箱运输
- 无需起吊机进行安装
- 维修方便
- 可离网运作



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## Step2: Technology at a glance 第二步：技术案例

I<sup>2</sup>PCC**TURBULENT**

100 kW micro hydropower plants

+ for rivers with small height differences

+ Long operating life

+ Fish-Friendly Vortex

**www.turbulent.be**

100kW 微型水电站

- 适用于河体较浅的河流
- 运营时间长
- 所产生的漩涡对鱼类无害



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## Step2: Technology at a glance 第二步：技术案例

I<sup>2</sup>PCC**OWS**

world leading company in the construction and operation of anaerobic digestion plants

+ Household or farm waste

+ high reliability &amp; biogas yield

**www.ows.be**

世界领先的厌氧消化厂建筑及运营公司

- 家庭或农村垃圾
- 高度可靠及沼气产量高



Organic Waste Systems



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## Step2: Technology at a glance 第二步：技术案例

I<sup>2</sup>PCC**UMICORE**

global player in materials for  
 + high-grade solar cells,  
 + rechargeable batteries,  
 + LED applications &  
 + catalytic converters

**www.unicore.be**

全世界知名的材料（回收）供应商：

- 高级太阳能电池
- 充电电池
- LED应用及催化转化器





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## Step2: Technology at a glance 第二步：技术案例

I<sup>2</sup>PCC**BIO2CLEAN**

Bacteria assisted phytoremediation  
 + adapted bacteria & plants  
 + low maintenance cost (nature)  
 + sustainable (no transport)

通过细菌菌种及植物进行土地修复

- 菌种及植物的改造
- 可大大减少维护成本
- 可持续发展（无需运输）





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## Overview technology 技术一览

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### REMOVAL

#### • Resources

- State of art sorting: **IPAS**
- State of arte waste-to-energy plant: **Keppel-Seghers**

#### • Emissions

- fully back washable flat sheet membrane: **Blue Foot Membrane**

### 去除有害物质

#### • 资源

- 一流水平的挑选技术: **IPAS**
- 一流水平的垃圾转能源厂项目 **Keppel-Seghers**

#### • 污水排放

- 可完全被回流清洗的平板膜: **Blue Foot Membrane**

Step3  
第三步



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## Step3: Technology at a glance 第三步：技术案例

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### IPAS

IPAS designs and builds 'tailor made' refining and separation installations.

- + raw materials and waste
- + wet and dry technologies

[www.ipas.world](http://www.ipas.world)

IPAS可以进行量身订制的垃圾分拣工厂设计及建设

- 原材料及垃圾
- 湿或干的处理技术



**IPAS**  
industrial processes | active services



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## Step3: Technology at a glance 第三步：技术案例 I<sup>2</sup>PCC

### KEPPEL-SEGHERS

turnkey waste-to-energy (WTE) plants

+ high quality and reliability.

垃圾转能源（WTE）交钥匙项目

- 高品质及可靠的施工水平



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## Step3: Technology at a glance 第三步：技术案例 I<sup>2</sup>PCC

### BLUE FOOT MEMBRANES

wastewater treatment and water reuse

+ potable water

+ wastewater

+ industrial process water

[www.bluefootmembranes.com](http://www.bluefootmembranes.com)

是污水处理及回收的关键（平板滤膜）

- 饮用水
- 污水
- 工业生产用水



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# 感谢您的关注 Thank you!

欢迎提问及交流

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